UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105

April 25, 2017

Mr. Anthony R. Brown
Environmental Manager
Atlantic Richfield Company
4 Centerpointe Drive, LPR 4-435
La Palma, CA 90623-1066

Re: Atl antic Richfield Draft Amendment No. 2- Full Scale Field Demonstration Interim Combined Acid Drainage Treatability Investigation Work Plan, Leviathan Mine Site, Alpine County, California dated March 31, 2017.

Dear Mr. Brown,

EPA has considered Atlantic Richfield's D raft Amendment No. 2- Full Scale Field Demonstration Interim Combined Acid Drainage Treatability Investigation Work Plan, Leviathan Mine Site, Alpine County, California dated March 31, 2017 (work plan amendment). This work plan was submitted as partial fulfillment of the Scope of Work for completin g the remedial investigation and feasibilit y study to identify a long term remedy pursuant to Administrative Order for Remedial Investigation and Feasibility Study (RI/FS), Leviathan Mine, Alpine County, California (CERCLA Docket No. 2008-18, June 23, 2008); and the Administrative Settlement Agreement and Order on Consent for Removal action, CERCLA Docket No. 2008-29/2009(a), effective January 21, 2009 (and modified as of July 22, 2013) .

The work plan describes how ARC plans to operate the hi gh density sludge (HDS) Plant to treat combined flows of acid drainage (AD) from the Adit, Pit Underdrain (PUD), Channel Underdrain (CUD), and Delta Seep (DS). The work plan is based on the results of bench- and pilot-scale treatability studies, and full-scale capacity testing conducted during 2014 to evaluate the feasibility and effectiveness of HDS treatment technology to treat combined flows from at least four of the five primary acid drainage discharges at the Leviathan Mine Site (site) in Alpine County, California.

Background: Since 2001 ARC and the Regional Water Qualit y Control Board have conducted seas onal early response actions at the Leviathan Mine Superfund Site.

- The Lahontan Regional Water Qualit y Control Board collects acid drainage from the Adit and PUD in Ponds 1, 2N, and 2S. During normal or dry water years, the ponds provide sufficient capacity to store the acid drainage thru the winter / spring months. In mid-July the water is typically treated and discharged. During wet years such as occurred during 2004-2005, 2005-2006, 2010-2011, and currently in 2017, the ponds threaten to overflow before the existing pond water treatment system can be fully accessed and operated, and early season treatment is necessary to prevent discharge of untreated pond water to Leviathan Creek.

- Atlantic Richfield Compan y mobilizes to the site each spring and intercepts the Channel Underdrain (CUD) and part of the Delta Seep (DS) discharge, conveys the intercepted water to Pond 4, and treats the water in an HDS plant prior to discharge. The HDS plant typically operates from late May to late October.

ARC submitted an Interim Combined Acid Drainage Treatability Investigation Work Plan to EPA on June 18, 2014. The work plan was approved b y EPA on October 14, 2014.

On December 18, 2015, ARC provided EPA with an Interim Combined Acid Drainage Treatabilit y Investigation Report describing the results of bench-scale and pilot-scale treatabilit y studies to evaluate the feasibilit y and effectiveness of HDS treatment technolog y to treat combined flows from at least four of the five primar y acid drainage discharges.

On March 14, 2016 EPA provided a partial approval for construction of the interim combined treatment (ICT) conveyance system and controls, and completion of the treatability study recommended in the report. EPA clarified:

> *"This approval also notes that, while conducting ICT trials is a desirable step toward identifying an option for a long term remedy at the site, many of the design criteria in this report are not necessarily appropriate or approved for use in remedy selection and design.*
>
> *EPA understands approval to being planning for construction season logistics is needed at this time so Atlantic Richfield may proceed this year. Please note EPA's concurrence with the Attachments (particularly Attachments B, C and D) is pending detailed review by EPA."*

On February 6, 2017 ARC provided responses to EPA comments. EPA is completing its review and will provide additional comments in a separate letter.

On March 31, 2017 ARC submitted a workplan to collect and treat combined acid drainage from the Adit, PUD, CUD, and DS at the HDS Plant. ARC will fully assess the capability of the HDS Plant to treat these combined flows, and document the full scale demonstration results in a report.

EPA provides the following comments:

The abundant precipitation and high flows experienced at the site this year present an excellent opportunity to demonstrate HDS Plant capabilities to treat combined flows. EPA approves ARC's proposal to attempt ICT trials at Leviathan Mine in accordance with the work plan subject to the following conditions:

1) ICT trials do not interfere with or prevent ongoing Regional Board activities necessary to prevent an overflow of untreated acid drainage from Ponds 1, 2N, 2S or 3 to Leviathan Creek.
2) Maximum storage capacity is available in Ponds 1, 2N, 2S, 3, and 4 by the end of the treatment season.
3) ICT trials do not prevent emptying Ponds 1, 2N, 2S, 3, and 4 by the end of the treatment season.

Please understand that concurrence with performing the proposed treatability study does not imply agreement with ARC's descriptions of expected flow and chemistry conditions at the site. EPA also expects any ongoing ERA/removal action attempting treatment of combined flows that may be proposed

based on results of ICT trials to include contingencies that will prevent overflow of untreated acid drainage to Leviathan Creek.

This partial approval also notes that, while conducting ICT trials is a desirable step toward identifying an option for a long term remedy at the site, many of the design criteria in this report are not necessarily appropriate or approved for use in remedy selection and design.

EPA is completing its review and will provide more detailed comments under separate cover.

If you have any questions, please feel free to contact me at (415) 947-4183 or Deschambault.lynda@epa.gov.

Sincerely,

Lynda Deschambault
Remedial Project Manager

Cc by electronic Email:

Douglas Carey, California Regional Water Quality Control Board, Lahontan Region
Neil Mortimer, Washoe Tribe of Nevada and California
David Friedman, Nevada Department of Environmental Protection
Kenneth Maas, United States Forest Service
Toby McBride, United States Fish and Wildlife Service
Steve Hampton, California Department of Fish and Wildlife
Marc Lombardi, AMEC